Rorschach Responses and the Influence of Color

RICHARD S. LAZARUS[1] AND **MARGARET OLDFIELD**
Clark University

IT HAS BEEN a number of years since the senior author published a series of essentially negative results with respect to the influence of color on the Rorschach Test (5) The general conclusions from this experiment, in which a series of standard inkblots were compared with a noncolored version, were that the presence of color did not influence the psychogram (other than the actual color responses themselves) and that color was also unrelated to the presence of signs of "color shock"

Since publication of that article, a number of other experiments dealing with the influence of color have appeared, most of which have confirmed the original findings (1, 2, 3, 4, 6, 7) Results which are at variance with the study by Lazarus (5) have been reported by Siipola *et al* (8, 9) In one article by Siipola, Kuhns, and Taylor (9) a number of criticisms were offered of the Lazarus methodology and conclusions The purpose of the present article is to clarify some of the issues raised by Siipola's data and criticisms, to present re-analyzed data from the original study, and to discuss an additional experiment

In brief, Siipola found that the presence of color resulted in increased response time, particularly when the color was incompatible with the association suggested by the form of the blot, that color increased the frequency of positive and negative affective attitudes as compared with neutral; that color resulted in changes in content reflecting associative disruption; and that these effects were restricted largely to blots which were not "highly structured" In addition, Siipola *et al* (9) produced data which suggested that the procedures of retesting subjects with the same blots produced a memory effect which obscured the effects of color.

---

[1] The present data were collected while the senior author was at the Johns Hopkins University

In dealing with the discrepancies between their results and those of Lazarus, Siipola *et al* offered two criticisms of the methodology used by Lazarus In the first place, it was argued that the test-retest design and the counterbalancing procedures used by Lazarus produced a confounding memory effect when the sequence of presentation was from chromatic to achromatic sets of blots Therefore the effect of color might have been obscured for at least half the subjects Second, some of the analyses reported by Lazarus compared the data from all 10 cards in the chromatic and achromatic series This resulted in adding to the essential color-noncolor comparisons the unessential data from the five cards on which there never was any color in the first place Thus any differences between achromatic and chromatic series would be hidden

We shall deal with these two criticisms by citing some additional information and by a reanalysis of the original data of Lazarus (5). In the first place, the results of a study by Baughman (3) are in close agreement with those of Lazarus in spite of the fact that Baughman's procedure did not use the counterbalancing technique Baughman used an individual administration of the test with a neurotic population In the comparison which is relevant here, Baughman compared two groups of subjects on the series of cards in which color was retained with the series in which the color was removed The effect of the presence of color was negligible

Secondly, in attempting to check on Siipola's reasoning we reexamined Lazarus's original data, using only those five of the Rorschach cards which are normally colored In addition, in one such comparison the counterbalanced order of presentation was discarded In other words, the protocols of the 50 subjects who had received the chromatic series on the first administration were compared with the protocols of the 50 subjects who had received the achromatic series first, ignoring the retest data altogether

Table IA shows the comparison of each scoring category on the chromatic and achromatic series when the original counterbalanced order of presentation is used but when only those five cards which are colored on the standard Rorschach Test are included in the comparison As in the case of the original report (5), the frequency of space responses and the *F%* are significantly different in the two

TABLE I

Comparison of Scoring Categories on Chromatic and Achromatic Series, Cards 2, 3, 8, 9, 10

Scoring Categories	A Using Test-Retest, Counterbalanced Design		B Using Two Separate Samples of Subjects	
	Color	Non-Color	Color	Non-Color
W	67	81	41	57
D	1181	1088*	597	470†
Dd	167	196	96	88
R	1410	1365	729	615†
M	167	167	72	87
m	28	32	8	11
Y	65	83	37	45
V	27	29	13	13
F+	678	689	349	293
F−	159	177	92	78
F	191	229*	97	108
FM	262	256	144	108*
H	256	264	126	135
A	683	652	352	306
An	78	77	44	38
F+%	8042	7903	3917	3962
F%	7176	7946†	3666	3831
A%	4875	4841	2429	2517
P	284	293	146	137
S	75	107†	40	51
Z	1208 5	1364	628 5	741

*Significant at 5-or-less-per-cent level of confidence
†Significant at 1-or-less-per-cent level of confidence

series In addition, only the approach scores, particularly the frequency of usual details, become significantly different when the color is removed There is a reduction of *D* responses in the achromatic series and a slight increase of rare detail (*Dd*) Thus the revision of the analysis in accordance with one of Siipola's criticisms does not alter the general conclusion that there is little effect of color

The more crucial comparison from Siipola's point of view deals with the comparison without the memory effects Table IB shows the comparisons for each scoring category for the two groups of subjects taking the chromatic and achromatic series respectively, without counterbalancing procedures and with only the five normally colored cards It will be noted that the only significant differences found in this comparison are for the frequency of usual details, the number of responses, and the FM response. Because of the doubts that may be raised about using the standard *t*-tests for data that are not normally distributed, the same analysis was made using the Median Test By this procedure, only the number of usual detail responses differs significantly (at the 5-per-cent level) between the chromatic and achromatic series, *D* being greater when color is present

An important difference in methodology between the Lazarus and the Siipola experiments concerns the kind of inkblots which these studies employed In Siipola's studies, segments of inkblots in the form of usual details were used In all other experiments, the entire complex blot was employed It seems plausible that when a subject had to interpret the complex blot, his examination of the stimulus in an effort to organize it perceptually would allow him maximal opportunity to select those areas for his first response which he could handle readily If he had difficulty integrating the form and color of a particular detail (as is suggested by Siipola) then he could readily bypass it for an area which did not offer such difficulty In the case of Siipola's individual segments, however, no such selection was possible This difficulty might then be manifested in delayed reaction times

If this analysis is correct, then Siipola's findings are really not applicable to the Rorschach Test in its standard form since any effects of color would be obscured by the complexity of the stimulus In that case, Siipola, using segments of inkblots, could have shown definite effects of color on response time, affective judgments, and content, while other experimenters (e g , 3, 5) using the total blots obtained negative results.

Siipola's idea was that the associative difficulty of combining a particular form with an incongruous color increased response time This seemed quite reasonable to the present authors Moreover, if an incongruous color impeded the subject in giving associations to a particular shape, then a congruous color should facilitate it From the point of view expressed here, we would predict that reaction time would be shorter for achromatic blots than for their mates with incongruous color, longer for achromatic blots than their mates with congruous color, and shorter for blots with congruous color than for their duplicates with incongruous color An experiment was designed to explore these ideas

PROCEDURE

Thirty-six discrete details were selected from the standard Rorschach Test The outline of each of these details was traced on a white six-by-eight cardboard (see Figure 1).

The details were duplicated again on another set of cards so that two identical sets of 36 inkblots, sets A and B, were produced The items were divided into three categories, each of which represented a separate kind of comparison For example, in category one, the cards in one series were colored with tempera paints with the intention of making the coloring congruous with the most frequent concept given to that particular detail in the Rorschach Test Its mate, the identical detail, was painted black Thus, twelve of the shapes were colored in such a way that the color matched the content suggested by the shape and the identical mates to these details were painted black

The second category of 12 pairs of details was arranged to produce a comparison between forms which were colored in a manner incongruous with the concepts suggested by the outlines and their identical black mates Thus, for every detail which was painted in an incongruous manner there was an identical form which was painted black

The third category permitted a comparison of congruous form-color combinations with their identical incongruous mates Twelve of the details were given congruous coloring, and their identical counterparts were painted with incongruous coloring

To illustrate, one of the 36 details (number 21, Figure 1) is often seen as a tree on the Rorschach Test For the congruous set, the upper portion of the tree was painted solid green, while the part that represents the trunk was painted brown In its noncolored version the colors were gray and black respectively (see Tables III and IV) A congruous apple (item number 1) was painted red, while an incongruous apple was painted a deep blue. An incongruous face (item number 19) was painted blue for the face and deep red for the hair and beard In its noncolored version black and gray were used respectively The black and gray shades were designed to match the lines which divided the two colors in the colored series, thus making them identical except for the nature of the coloring The three sets of 12 details used in making up these comparisons were arranged so that the content of each would be most nearly similar For example, there were approximately the same number of faces in all three sets of 12 pairs of details

Each of the pairs of 12 details was further divided, so that one

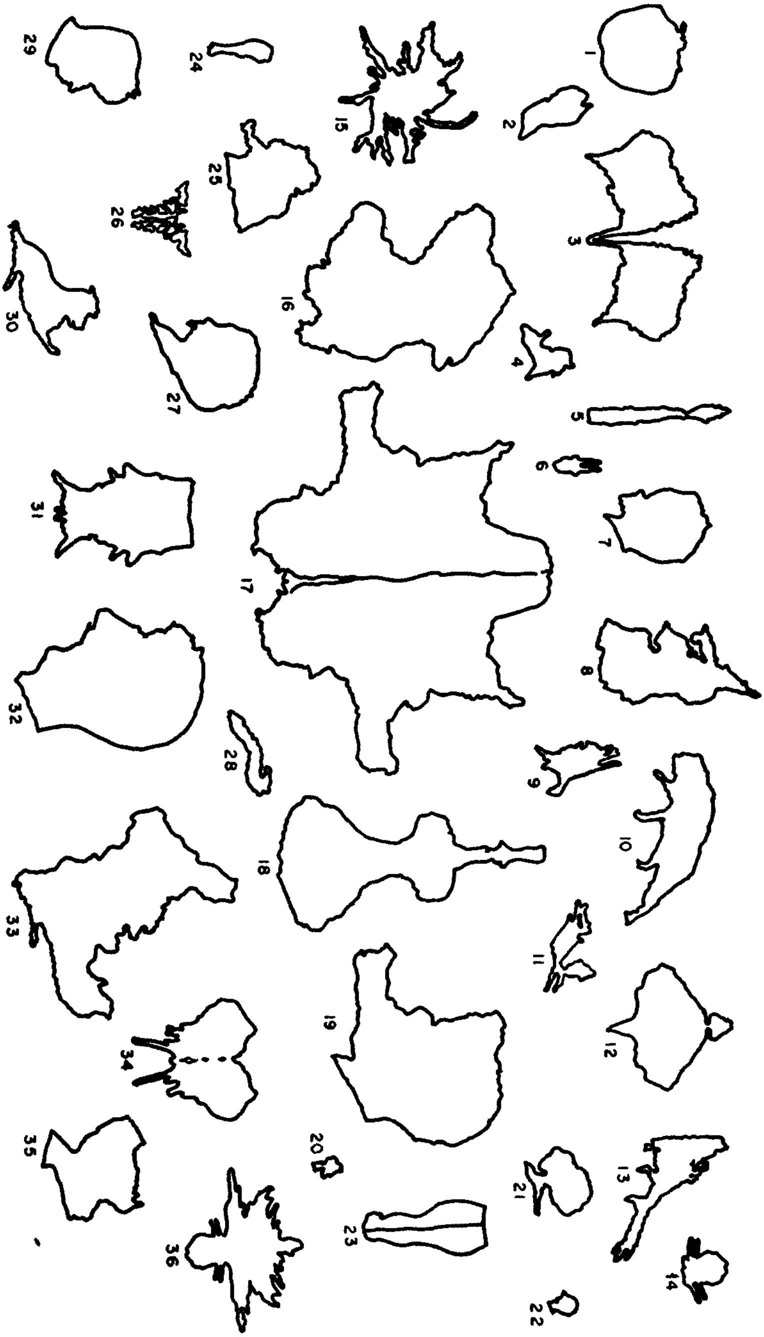
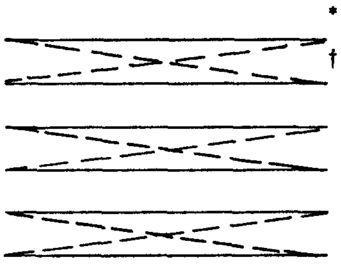


FIG 1 Forms used in the present experiment

TABLE II
Experimental Design Schematized

Test A-36 Blots	*Test B-36 Blots*
6 Black	6 Congruous
6 Congruous	6 Black
6 Black	6 Incongruous
6 Incongruous	6 Black
6 Congruous	6 Incongruous
6 Incongruous	6 Congruous



Basic Comparisons
12 Black vs 12 Congruous
12 Black vs 12 Incongruous
12 Congruous vs 12 Incongruous

---

*Solid lines mean that the blots on the left are the mates of the blots on the right which were taken by different subjects.

†Dotted lines mean that to compare the black and congruous series, the connected sets of blots are pooled and compared In other words, the 6 black blots in test A are added to the 6 black blots in test B and compared with the two sets of 6 congruous blots Thus the same subjects contribute to the congruous blots as to the black blots, there is no memory problem, and the shapes represented in both series are identical

TABLE III
Test Items for Series A-B*

No.	Content	A Series	B Series	No	Content	A Series	B Series
27	Head	B	I (green)	8	Witch	I (blue)	B
3	Two flags	C (red)	B	30	Animal	I (yellow)	C (gray)
10	Animal	C (brown)	I (pink)	12	Top	C (red & white)	B
21	Tree	C (green & brown)	I (pink & blue)	35	Human head	I (purple)	C (flesh)
1	Apple	B	C (red)	4	Animal	B	I (yellow)
11	Insect	C (green)	I (purple)	13	Tree root	I (red)	C (brown)
22	Human head	B	I (blue)	28	Worm	C (green)	B
15	Lobster	I (blue)	B	19	Human Head	C (flesh)	I (red & blue)
20	Tree	B	C (green & brown)	5	Candle	B	C (yellow)
26	Ribs	I (green)	C (white)	32	Human head	I (blue)	B
14	Insect	I (purple)	B	24	Chicken leg	B	C (tan)
33	Boot	C (brown)	I (pink)	9	Insect	C (green)	B
31	Animal head	B	C (brown)	29	Human head	B	C (flesh)
7	Human head	C (flesh)	B	17	Animal hide	I (yellow)	C (brown)
16	Animal	I (blue)	C (brown)	2	Leaf	C (green)	B
25	Human, top half	B	I (blue)	6	Animal head	B	I (orange)
18	Violin	I (blue)	B	23	Human legs	I (purple)	B
36	Insect	B	I (pink)	34	Butterfly	C (yellow)	I (blue)

*The actual order of the items in this list represents the sequence of presentation to the subject, while the numbers refer to the drawn details in Figure 1

TABLE IV

TEST ITEMS FOR SERIES C-D*

No	Content	C Series	D Series	No	Content	C Series	D Series
27	Human head	C (flesh)	B	8	Witch	I (blue)	B
3	Two flags	I (green)	C (red)	18	Violin	C (brown)	I (pink)
21	Tree	B	C (green & brown)	12	Top	C (red & white)	B
10	Animal	C (brown)	B	35	Human head	B	C (flesh)
1	Apple	B	I (blue)	44	Animal	C (brown)	B
11	Insect	C (green)	B	13	Tree root	B	I (red)
22	Human head	I (blue)	C (flesh)	28	Worm	C (green)	I (blue)
15	Lobster	I (blue)	B	19	Human head	I (blue & red)	B
26	Ribs	B	C (white)	5	Candle	C (yellow)	I (brown)
20	Tree	I (purple & yellow)	B	32	Human head	B	C (flesh)
14	Insect	B	I (purple)	24	Chicken leg	I (green)	B
33	Boot	I (pink)	C (brown)	29	Human head	B	I (green)
31	Animal head	B	I (blue)	9	Insect	C (green)	I (yellow)
7	Human head	C (flesh)	I (blue)	17	Animal hide	I (yellow)	C (brown)
16	Animal	I (blue)	C (brown)	2	Leaf	C (green)	I (blue)
23	Human legs	C (flesh)	B	6	Animal head	B	C (brown)
30	Animal	I (yellow)	C (gray)	25	Human, top half	I (blue)	B
36	Insect	B	I (pink)	34	Butterfly	B	C (yellow)

*The actual order of the items in this list represents the sequence of presentation to the subjects, while the numbers refer to the drawn details in Figure 1

was placed in Test A, the other in Test B As a consequence, the subject who received Test A saw six black items which were matched with the same items in the congruous form in Test B which was taken by different subjects, six congruous items in Test A which were matched with the same items in black form in Test B, and so on In other words, six of the items which were black in Test A were congruous in Test B, while the other six black items in Test A were incongruous in Test B This arrangement may be seen in Table II, which presents the basic design of the experiment Table III lists each of the items (randomized in test form), the expected content, and the coloring in Test A-B

The purpose of the arrangement described above was to control the different reaction time characteristics of the two groups of subjects, one taking Test A, the other Test B In the present design a counterbalancing procedure was used in which the same subject contributed to the scores for each color series That is, a particular subject responded to congruous items, incongruous items, and black items, but the cards representing each category were different While he never saw the same outline twice, he contributed to all three color categories Thus, unlike Siipola's experiment, any sampling differences are held to a minimum, and there is no danger of any memory effect contaminating the results

Because of the subjective nature of the painting process, we duplicated the entire procedure with groups and color combinations different from those used in Tests A and B Tests C and D were devised using the same 36 cards in a different order and repainting many of them to fit into a different category For example, item number 27 which was black and incongruous in Test A and B was congruous and black in Test C and D (see Table IV)

The instructions were the same as those given by Siipola, with the exception that in the first experiment using Test A-B, the subjects were not told to inhibit turning of the cards, while they were in the second experiment using Test C-D Each card was presented so that only the first response was sought and timed The content of the response was also recorded and the subject was asked to describe his reaction to the card by the words *like, dislike,* or *indifferent*

RESULTS

The findings in the present experiment have been divided into three main categories with respect to the effects of the various color comparisons on response time, affective value, and content

Response Time

The average response times for the three basic comparisons, congruous coloring with incongruous coloring, black with incongruous, and black with congruous, are presented in Table V In developing these comparisons, the cards were divided into two categories in accordance with their ambiguity Some of the cards yielded consistently the same content For example, card 35 was always seen as a face or human head On the other hand, some of the cards yielded a wide range of different content A distribution was produced for both the A-B and the C-D series based upon the ratio of the modal response to each card to the total number of responses (in every case this was 40, representing the total number of subjects) The actual range for these ratios was from 1/40 to 40/40 Each series was divided into two, at roughly the median ratio The nonambiguous cards in the A-B and C-D series were then defined as those cards yielding a modal content of at least 31 in 40 In other words, nonambiguous cards were those which stimulated essentially

TABLE V

AVERAGE RESPONSE TIMES FOR ALL COLOR COMPARISONS

Series A-B and C-D Combined (*N*=*80*)

Coloring	Ambiguous	Non-ambig	Ambig & Non-ambig
C	39 35	11 56	50 91
I	48 08*	12 20	60 28*
B	17 74	22 21	39 95
C	24 24*	18 84	43 08
B	57 61	8 11	65 72
I	61 81	10 22	72 03

Series A-B (*N*=*40*)

Coloring	Ambiguous	Non-ambig	Ambig & Non-ambig
C	38 02	15 74	53 76
I	52 35*	15 33	67 69*
B	16 30	27 54	43 84
C	19 29	20 11*	39 39
B	53 40	10 14	63 54
I	47 58	11 65	59 23

Series C-D (*N*=*40*)

Coloring	Ambiguous	Non-ambig	Ambig & Non-ambig
C	40 68	7 38	48 06
I	43 80	9 07	52 87
B	19 18	16 88	36 06
C	29 19*	17 58	46 77*
B	61 81	6 09	67 90
I	76 04*	8 80*	84 84†

*Significant at 5-or-less-per-cent level of confidence
†Significant at 1-or-less-per-cent level of confidence

one kind of content, such as face, leg, tree, etc , while ambiguous cards involved a mode of less than 31 out of 40

Examination of the data in Table V produces the following findings

1 Response times are significantly[2] shorter for the congruous color-form combinations than for the incongruous ones This is clear only in the ambiguous cards

2 With ambiguous cards only, response times are significantly shorter for the black items than for the congruous color items

3 On the C-D series there is a significant tendency for the black items to yield shorter response times than for the incongruous color items This finding is not confirmed on series A-B

4 In the case of the nonambiguous cards, there are few signifi-

---

[2] The significance level was obtained by means of a t-test, based upon matched pairs since the same subjects contributed to the congruous and incongruous distributions

cant differences. In these cards, however, there are some tendencies for incongruous items to yield longer response times than congruous ones, black cards to yield longer response times than congruous items, and incongruous items to result in slower response times than the black.

Affective Value

The method of analyzing the results with respect to the effect of coloring on affective value is comparable to that for response time, except that no attention was paid to the ambiguity of the material. The indices of affective value were based upon the frequencies of like, dislike, and neutral judgments to each card, classed in terms of the type of coloring. The results of this analysis are presented in Table VI.

With respect to the frequency of like judgments, there is a statistically significant and surprising tendency for more like judgments to be given to blots with incongruous color-form combinations than

TABLE VI

The Effect of Coloring on Affective Value

Series A-B and C-D Combined (N=80)

Coloring	Like	Dislike	Neutral
C	2.41	1.41	2.18
I	2.86*	1.25	1.89
B	2.00	1.69	2.31
C	2.81†	1.33*	1.86†
B	1.59	2.21	2.20
I	1.91	1.89	2.20

A-B (N=40)				*C-D (N=40)*			
Coloring	Like	Dislike	Neutral	Coloring	Like	Dislike	Neutral
C	2.25	1.40	2.35	C	2.58	1.43	2.00
I	2.78*	1.33	1.90	I	2.95	1.18	1.88
B	1.83	1.83	2.35	B	2.18	1.55	2.28
C	3.08†	.95†	1.98	C	2.55	1.70	1.75*
B	1.78	2.03	2.20	B	1.40	2.40	2.20
I	2.18	1.50	2.33	I	1.65	2.28	2.08

*Significant at 5-or-less-per-cent level of confidence

†Significant at 1-or-less-per-cent level of confidence

to blots with congruous combinations There is also a significant difference between the black and congruous items Subjects favor blots which are congruous rather than those which are black It appears as though subjects prefer any coloring to black

With respect to dislikes, the differences are less marked and less systematic, but they follow mostly as the obverse of the findings for the like judgments It is primarily the like judgments rather than the dislikes that are influenced by the manipulation of coloring in the inkblots, although there is actually a tendency for black to be disliked more than congruous coloring

With respect to neutral judgments, black seems to result in significantly more neutral judgments than congruous coloring

The general trends show that black yields more neutral, more dislikes, and fewer likes than does any kind of coloring, and incongruous coloring yields more like, fewer dislike, and fewer neutral judgments than does congruous coloring

What is perhaps most interesting is that affective value and response time are related The 36 cards in both the A-B and C-D series were each given three scores for affective value based upon the frequency of like, dislike, and neutral judgments by all the subjects In addition, the average response time for each card for all subjects was obtained The relationship between these two sets of three affective scores was studied by means of a Chi Square technique using median splits to divide the two sets of distributions and contingency coefficients to express the degree of relationship (see Table VII)

In two cases, the frequency of like and dislike judgments, there are statistically significant relationships Favorable attitudes are associated with fast response times, and unfavorable attitudes are associated with slow response times It is our interpretation that blots which take a long time to produce associations are apt to be disliked because the task is perceived as more difficult or unpleasant

Content

There are a great many blots in the present series which show virtually no change in the nature of the responses given, regardless of how they were colored Some of the blots are so structured that the same response was always or almost always given regardless of color On the other hand, just as response time was most affected by

TABLE VII

THE RELATIONS BETWEEN AFFECTIVE VALUE AND RESPONSE TIME*

Series A-B and C-D Combined ($N=72$)

	LIKE			DISLIKE			NEUTRAL	
	Above	Below		Above	Below		Above	Below
Slow	12	24	Slow	25	11	Slow	17	19
Fast	22	14	Fast	10	26	Fast	22	14
	$X^2=4$ 51 $c =$ 24†			$X^2=10$ 90 $c =$ 36			$X^2=$ 90 $c =$ 11	

Series A-B ($N=36$)

	LIKE			DISLIKE			NEUTRAL	
	Above	Below		Above	Below		Above	Below
Slow	8	10	Slow	14	4	Slow	7	11
Fast	11	7	Fast	4	14	Fast	9	9
	$X^2=$ 45 $c =$ 11			$X^2=9$ 00 $c =$ 45			$X^2=$ 11 $c =$ 06	

Series C-D ($N=36$)

	LIKE			DISLIKE			NEUTRAL	
	Above	Below		Above	Below		Above	Below
Slow	5	13	Slow	14	4	Slow	8	10
Fast	13	5	Fast	3	15	Fast	10	8
	$X^2=5$ 44 $c =$ 36			$X^2=11$ 15 $c =$ 49			$X^2=$ 11 $c =$ 06	

*A Chi Square of 6 64 is required for significance at the 1-per-cent level of confidence, and 3 84 at the 5-per-cent level of confidence

†Contingency coefficient

coloring in the ambiguous cards, so was content For example, in series A-B, card 7 was always seen as some kind of human head whether the blot was colored in a congruous manner or in black Card 27 was always seen as a face in spite of the change from black to incongruous Card 21 was seen as a tree when it was painted in a congruous manner using brown and green coloring, and remained a tree most of the time when the colors were pink and blue But there developed some added response categories in this instance, such as "old woman," "dog," "volcano," and "A-bomb" In still other instances the most frequent responses were drastically altered by the difference in coloring For example, card 24 was most often seen as a chicken drumstick in its black form, but in the colored version, which was supposed to be congruent, "animal leg" shared honors with "club" There is an antagonism between the importance of shape factors and color in determining the content of the response By definition, really, when one is important, the other cannot be

DISCUSSION

In the present experiment, the authors hypothesized that congruous color-form combinations would yield faster responses than incongruous combinations, black faster than incongruous, and congruous faster than black Only the first of these hypotheses is confirmed with any confidence As is suggested by Siipola (8, 9), the major differences are found for ambiguous cards where there is a marked degree of variation in the typical content of the responses given While there are some tendencies for color to yield slower associations in the case of the ambiguous cards, in the nonambiguous cards there is a tendency for congruous color to facilitate the rate of the response Moreover, subjects seem to like the colored cards better, and those cards to which more favorable attitudes are shown turn out to be the cards on which the fastest responses are given While the present experiment tends to confirm some aspects of Siipola's results, there remain serious discrepancies It is possible that some of these discrepancies are associated with the free use of tempera paints in the present study

More important is the broader issue of the influence of color, first on the Rorschach Test, and second on the kinds of stimuli used by Siipola and the present authors We are inclined to believe that the findings in this type of experiment are just not applicable to complicated inkblots such as are found on the Rorschach Test Since our data are only slightly positive, it is pointless to make the next logical step of directly testing this statement by embedding the single details in some background of other details to form more complicated blots

But what about the theoretical question of the influence of color when the subject can give only one response and has only one limited area to choose from? Here we believe that, while some slight effect can be demonstrated, the answer is largely negative Structural factors play the overwhelming role, with color questionable The average reaction time of the blots, regardless of coloring, ranged from about one second to 18 seconds with a standard deviation of approximately 5 When the average response times on all cards regardless of coloring for each individual subject is examined, the range of individual differences is from 2 to 26 seconds with a standard deviation of roughly 9 Furthermore, when the average response times for the ambiguous cards is compared with those of the nonambiguous cards, the figures are roughly 13 against 4 respectively

If these marked variations which are associated with the structural characteristics of the cards, their ambiguity, and subject differences in response times are considered in the light of the fact that the largest mean difference in response time that could be attributed to color is about 10 seconds (the remainder are very much smaller), then it must be concluded that color plays a relatively insignificant role Its role is biggest and hardest to interpret when shape factors are reduced in importance

Affective value seems also to be of limited though statistically significant importance as one of the consequences of color manipulation The effects are small and must be viewed in the light of the finding that response time (associative difficulty?) covaries with affective value Moreover, if there is any effect of color on affective value, the present data suggest that any kind of coloring is preferred to black and that incongruous coloring is preferred to congruous coloring, a fact very hard to interpret

We must also point out that it is not a difficult task to paint inkblots with colors which are clearly inappropriate to the content which the blot's shape suggests, at least in the case of nonambiguous blots But it is logically inappropriate to designate the ambiguous blots as congruous or incongruous with respect to form-color combination If they are ambiguous it means that a wide variety of responses can be given, and we therefore do not know what color-form combination to create in order to produce congruity or incongruity Thus the finding that significant color effects were found primarily in the ambiguous blots must be interpreted with a grain of salt since the classification of these effects has dubious validity This problem of classification of congruous-incongruous to so called ambiguous blots appears equally in Siipola's discussion of her own results

Finally, perhaps the most serious theoretical limitation to the use of these types of data (e g , 3, 5, 9,) is that they are group data That is, experiments of this type tend to ignore the possibility that there are important interactions between personality characteristics and responsiveness to the presence of color For example, for some subjects the color might lead to disturbing associations such as blood or sickness or sexual content For other subjects, the color might add an element of difficulty to the task of giving an association on the basis of its incongruity with the form-determined concept Or primitive color associations may be resorted to in the absence of other more adequate associations in developmentally inadequate persons This effect of color could be obscured by including such subjects among a larger sample of people who either disregard the color or are facilitated by it

It is possible to evaluate this alternative hypothesis of interaction only by studying the relationship between personality characteristics and patterns of individual differences in reaction to variously colored blots Such a methodology would be more in keeping with the hypotheses which the Rorschach user makes in dealing with the Rorschach psychogram The burden of providing evidence still remains with those who would hypothesize an influence of color upon the reactions to inkblots

Moreover, the methodology which mutilates the inkblots by taking usual details out of the context of the entire blots can yield only suggestions of what might be the case for the intact blots Such suggestions would then need to be tested for the standard Rorschach inkblots

Taking the data obtained in the present study, the authors are inclined to reaffirm the original conclusions of Lazarus (5) that the effects of color on the protocol of the Rorschach Test are absent or at least rather limited To a certain extent this also applies to single-detail inkblots. This conclusion excepts, of course, whatever predictive importance there might be in the way a person makes direct use of the color in the blot The usefulness of knowing whether a subject gives color dominated percepts (C and CF) as opposed to form dominated percepts (FC) is not the question here This problem must be tackled by an altogether different methodology

SUMMARY

The present article has presented a reanalysis of data reported by Lazarus (5) concerning the influence of color on the Rorschach protocol This reanalysis was prompted by some criticisms by Siipola

(8, 9) Discrepancies between the findings of Lazarus and Siipola remain after the reanalysis and may be attributed in part to the use of usual details by Siipola and complete Rorschach inkblots by Lazarus

An experiment is reported in which a series of usual detail inkblots were colored in such a way that it was possible to compare the effects of congruous color-form combinations with incongruous color-form combinations, black with congruous, and black with incongruous combinations Only a few significant differences in response time and affective value were found as a function of these color manipulations, some of them reversing the predicted directions These effects were considered extremely small in magnitude when other factors such as the effect of blot structure and individual differences in response time are taken into account

The general findings from the present experiment are in only partial agreement with those of Siipola The main conclusions offered by the authors are that, even in the restricted use of usual details rather than whole Rorschach inkblots, color plays a very minor role in determining group reactions to inkblots Moreover, the extent of that role depends upon the ambiguity of the blots, it being greater for ambiguous blots than for nonambiguous blots We should be examining structural and other types of factors as well as personality variables when we experiment with reactions to inkblots

REFERENCES

1 ALLEN, R M, MANNE, S H, & STIFF, MARGARET The influence of color on the consistency of responses in the Rorschach Test. *J clin Psychol*, 1952, **8**, 97-98

2 BARNETT, I The influence of color and shading on the Rorschach Test Unpublished doctor's dissertation, Univer of Pittsburgh, 1950

3 BAUGHMAN, E E A comparative analysis of Rorschach forms with altered stimulus characteristics I Group data II Card data Unpublished doctor's dissertation, Univer of Chicago, 1952

4 DUBROVNER, R. J, VON LACKUM, W J, & JOST, H A study of the effect of color on productivity and reaction time in the Rorschach Test. *J clin Psychol*, 1950, **6**, 331-336

5 LAZARUS, R S The influence of color on the protocol of the Rorschach Test *J abnorm soc Psychol*, 1949, **44**, 506-516

6 PERLMAN, JANET A Color and the validity of the Rorschach 8-9-10 percent *J consult Psychol*, 1951 **15**, 122-126

7 SAPPENFIELD, B R., & BUKER, S L Validity of the Rorschach 8-9-10 percent as an indicator of responsiveness to color *J consult Psychol*, 1949, **13**, 268-271

8 SIIPOLA, ELSA M The influence of color on reactions to inkblots *J Pers*, 1950, **18**, 358-382

9 ———, KUHNS, FLORENCE, & TAYLOR, VIVIAN Measurement of the individual's reactions to color in inkblots *J Pers*, 1950, **19**, 153-171

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.